CLAIMS:

1. A method of processing a time-sequence of separate image data sets which record induced changes in pixel values of successive images of a subject, each set comprising a plurality of image data items which each represent the location of an image pixel of the image subject according to a common reference frame within which the subject is located, the method including the steps of:

(a) selecting from each of a plurality of said separate image data sets an image data item which represents an image pixel located at the same fixed image pixel location, thereby to generate a time-domain image data set containing only image data items which represent an image pixel at the same said image pixel location;

(b) determining according to a measure of said induced changes as between all of the pixel values of the image data items of the time-domain image data set whether the image data items thereof are associated with the presence of a specified tissue within the image subject

2. A method according to Claim 1 including an additional step (c), following step (b), of identifying the image data items of the time-domain image data set as being unsuitable for use in the generation of an image of the subject after having been identified in step (b) as associated with the presence of the specified tissue within the image subject if the specified tissue is of a type which it is not desired to be included within the image of the subject.

3. A method according to Claim 1 or 2 wherein the

measure is defined according to the dispersion of the values of pixel intensity associated with the image data items within the time-domain image data set.

4. A method according to Claim 1, 2 or 3 wherein the image data items of the time-domain image data set are determined as being associated with the presence of the specified tissue within the image subject if the measure exceeds a predetermined threshold value.

5. A method according to any preceding claim in which step (b) includes:

forming a time-domain image vector wherein each image data item of the time-domain image data set represents a separate vector component of the time-domain image vector;

determining the measure according to a property of the time-domain image vector.

6. A method according to Claim 5 wherein the measure is determined according to the degree to which a time-domain image vector differs from an identity vector.

7. A method according to Claim 5 or 6 including:

determining the angle (α) subtended by the time-domain image vector with respect to the identity vector in the vector space of the time-domain image vector; and,

employing said angle (α) as the measure.

8. A method according to Claim 7 wherein said predetermined threshold value is exceeded if said angle (α) is less than a threshold angle value (α_0).

9. A method according to Claim 7 or 8 including:

repeating step (a) in respect of a plurality of image data items thereby to generate a corresponding plurality of time-domain image data sets;

forming a corresponding plurality of time-domain image vectors with each image data item of a given time-domain image data set representing a separate vector component of the given time-domain image vector;

determining the angle subtended by each of said time-domain image vectors with respect to the identity vector in the vector space of the time-domain image vector; and,

determining from the distribution of the values of said angles of all of said time-domain vectors the portion of said angular distribution arising substantially only from the presence within the image subject of said specified tissue, wherein said predetermined threshold value is exceeded if the said angle subtended by said time-domain image vector falls within said portion of said angular distribution.

10. A method according to Claim 9 wherein said threshold angle value (α_0) is the angular value which demarcates the portion of the angular distribution arising substantially only from the presence within the image subject of said specified tissue from the other portion(s) of the angular distribution.

11. A method according to Claim 9 or 10 wherein the angular distribution is the distribution of the natural logarithm of the value of the angles, and said portion of said angular distribution arising substantially only from the presence within the image subject of said specified tissue is determined according to a Normal Distribution having distribution parameters which cause it to most

closely correspond with a portion of said angular distribution.

12. A method according to Claim 5 including:

determining the second principal component of the time-domain image vector; and,

employing the value of said second principal component as said measure.

13. A method according to Claim 12 wherein the predetermined threshold value is exceeded if the value of the second principal component is greater than zero.

14. A method according to any of preceding claims 2 to 13 including the additional step of:

(d) replacing by a value of zero the pixel value of each image data item of each of said plurality of said separate image data sets identified as being unsuitable for use in the generation of an image of the subject.

15. A method according to any preceding claim including:

representing the time-domain image vector in terms of a principal component decomposition thereof employing all principal component vectors and corresponding principal component values thereof except: the largest principal component value thereof; and those principal component values thereof not exceeding a predetermined magnitude;

replacing by a value determined according to said principal component decomposition the pixel value of each image data item of each of said plurality of said separate image data sets identified as being suitable for use in the generation of an image of the subject.

16. A method according to any of preceding claims 2 to 15 in which steps (a) to (c) are repeated in respect of each pixel of each of said time-sequence of separate image data sets.

17. A method according to any preceding claim including forming an image from image data comprised in said time-sequence of separate image data sets having been processed according to any preceding claim.

18. Image processing means for processing a time-sequence of separate image data sets which record induced changes in pixel values of successive images of a subject, each set comprising a plurality of image data items which each represent the location of an image pixel of the image subject according to a common reference frame within which the subject is located, the image processing means including:

(a) selection means for selecting from each of a plurality of said separate image data sets an image data item which represents an image pixel located at the same fixed image pixel location, thereby to generate a time-domain image data set containing only image data items which represent an image pixel at the same said image pixel location;

(b) decision means for determining according to a measure of said induced changes as between all of the pixel values of the image data items of the time-domain image data set whether the image data items thereof are associated with the presence of a specified tissue within the image subject.

19. The image processing means according to Claim

18 including identifying means arranged to identify the image data items of the time-domain image data set as being unsuitable for use in the generation of an image of the subject if they are identified by said decision means (b) as being associated with the presence of the specified tissue within the image subject and if the specified tissue is of a type which it is not desired to be included within the image of the subject.

20. Image processing means according to Claim 18 or 19 wherein the measure is defined according to a measure of the dispersion of the values of pixel intensity associated with the image data items within the time-domain image data set.

21. Image processing means according to Claim 18, 19 or 20 wherein the image data items of the time-domain image data set are determined as being associated with the presence of the specified tissue within the image subject if the measure exceeds a predetermined threshold value.

22. Image processing means according to any of preceding claims 18 to 21 in which said decision means includes:

vector means arranged to form a time-domain image vector wherein each image data item of the time-domain image data set represents a separate vector component of the time-domain image vector;

measure determining means arranged to determine the measure according to a property of the time-domain image vector.

23. Image processing means according to Claim 22

wherein measure is determined according to the degree to which a time-domain image vector differs from an identity vector.

24. Image processing means according to Claim 22 or 23 including:

angle determining means arranged to determine the angle (α) subtended by the time-domain image vector with respect to the identity vector in the vector space of the time-domain image vector; and,

said decision means is arranged to employ said angle (α) as the predetermined measure.

25. Image processing means according to Claim 24 wherein said predetermined threshold value is exceeded if said angle (α) is less than a threshold angle value (α_0).

26. Image processing means according to Claim 18 wherein said selection means is arranged to generate in respect of a plurality of image data items a corresponding plurality of said time-domain image data sets;

said vector means is arranged to form a corresponding plurality of time-domain image vectors with each image data item of a given time-domain image data set representing a separate vector component of the given time-domain image vector;

said angle determining means is arranged to determine the angle subtended by each of said time-domain image vectors with respect to the identity vector in the vector space of the time-domain image vector; and,

said decision means is arranged to determine from the distribution of the values of said angles of all of said time-domain vectors the portion of said angular

distribution arising substantially only from the presence of a specified tissue within the image subject, wherein said predetermined threshold value is exceeded if the said angle subtended by said time-domain image vector falls within said portion of said angular distribution.

27. Image processing means according to Claim 26 wherein said threshold angle value (α_0) is the angular value which demarcates the portion of the angular distribution arising substantially only from said specified tissue from the other portion(s) of the angular distribution.

28. Image processing means according to Claim 26 or 27 wherein the angular distribution is the distribution of the natural logarithm of the value of the angles, and said decision means is arranged to determine said portion of said angular distribution arising substantially only from said specified tissue according to a Normal Distribution having distribution parameters which cause it to most closely correspond with a portion of said angular distribution.

29. Image processing means according to Claim 22 including:

principal component means arranged to determine the second principal component of the time-domain image vector; and,

said decision means is arranged to employ the value of said second principal component as said measure.

30. Image processing apparatus according to Claim

29 wherein the predetermined threshold value is exceeded if the value of the second principal component is greater than zero.

31. Image processing means according to any of preceding claims 18 to 30 including:

(d) data modifying means arranged to replace by a value of zero the pixel value of each image data item of each of said plurality of said separate image data sets identified as being unsuitable for use in the generation of an image of the subject.

32. Image processing means according to any of preceding claims 18 to 31 wherein said principal component means is arranged to represent the time-domain image vector in terms of a principal component decomposition thereof employing all principal component vectors and corresponding principal component values thereof except: the largest principal component value thereof; and those principal component values thereof not exceeding a predetermined magnitude;

the image processing means including data modifying means arranged to replace by a value determined according to said principal component decomposition the pixel value of each image data item of each of said plurality of said separate image data sets identified as being suitable for use in the generation of an image of the subject.

33. Image processing means according to any of preceding claims 18 to 32 arranged to so process each pixel of each of said time-sequence of separate image data sets.

34. Image processing means according to any of

preceding claims 18 to 33 including image forming means for forming an image from image data comprised in said time-sequence of separate image data sets having been processed by said image processing means according to any preceding claim.

35. Image processing means according to any of preceding claims 18 to 34 comprising computer means programmed to perform the method according to any one of claims 1 to 17.

36. Computer means programmed to perform the method according to any of claims 1 to 17.

37. A computer program product containing a computer program for performing the method according to any of claims 1 to 17.

38. A computer program for performing the method according to any of claims 1 to 17.

39. A method according to any of claims 1 to 17 in which the specified tissue is fat.

40. Image processing means according to any of claims 18 to 35 in which the specified tissue is fat.